

NPN SILICON PLANAR HIGH FREQUENCY TRANSISTOR

MPS5179

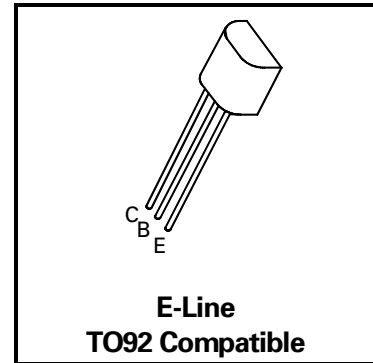
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FEATURES

- * HIGH $f_T=900\text{MHz}$ MIN
- * MAX CAPACITANCE=1pF
- * LOW NOISE 5dB

APPLICATIONS

- * CORDLESS TELEPHONES
- * KEYLESS ENTRY SYSTEMS
- * WIDEBAND INSTRUMENTATION AMPLIFIERS
- * TELEMETRY
- * WIRELESS LANS
- * REMOTE METERING
- * TAGGING



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	2.5	V
Continuous Collector Current	I_C	50	mA
Power Dissipation	P_{tot}	500	mW
Operating and Storage Temperature Range	$T_j:T_{stg}$	-55 to +200	°C

Note: Spice model available



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ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS.
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	20			V	$I_C = 1\mu\text{A}, I_E = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	12			V	$I_C = 3\text{mA}, I_B = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	2.5			V	$I_E = 10\mu\text{A}, I_C = 0$
Collector Cut-Off Current	I_{CBO}			0.02 1.0	μA μA	$V_{CB} = 15\text{V}, I_E = 0$ $V_{CB} = 15\text{V}, I_E = 0,$ $T_{amb} = 150^{\circ}\text{C}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.4	V	$I_C = 10\text{mA}, I_B = 1\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.0	V	$I_C = 10\text{mA}, I_B = 1\text{mA}$
Static Forward Current Transfer Ratio	h_{FE}	25		250		$I_C = 3\text{mA}, V_{CE} = 1\text{V}$
Transition Frequency	f_T	900		2000	MHz	$I_C = 5\text{mA}, V_{CE} = 6\text{V},$ $f = 100\text{MHz}$
Collector-Base Capacitance	C_{cb}			1.0	pF	$I_E = 0, V_{CB} = 10\text{V}, f = 1\text{MHz}$
Small Signal Current Gain	h_{fe}	25		300		$I_C = 2\text{mA}, V_{CE} = 6\text{V}, f = 1\text{KHz}$
Collector Base Time Constant	$rb'C_c$	3.0		14	ps	$I_E = 2\text{mA}, V_{CE} = 6\text{V},$ $f = 31.9\text{MHz}$
Noise Figure	NF			5	dB	$I_C = 1.5\text{mA}, V_{CE} = 6\text{V}$ $R_S = 50\Omega, f = 200\text{MHz}$
Common-Emitter Amplifier Power Gain	G_{pe}	15			dB	$I_C = 5\text{mA}, V_{CE} = 6\text{V}$ $f = 200\text{MHz}$

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TYPICAL CHARACTERISTICS

